

Should the Workers' Movement Support Nuclear Power?

By John Reimann



The “captains of industry” - from the Koch brothers to Bill Gates to Warren Buffett – are daily proving themselves incapable of running the world. Rather than “running” it, they are ruining it. We see this in the fact that now 80% of the US population is in or near poverty and economic uncertainty. We see it in the continual wars that are devastating lives around the planet. Perhaps more than anything else, we see it in the devastation of the environment that their system – capitalism – is wreaking upon us.

This is why 49% of young adults view socialism favorably.

But socialism means that working class people will run society. If they – we – are to do so, then we must have a basic understanding of the issues that confront us so that we can solve them. Nowhere is this more so than in the issue of global warming, which is caused by the infamous “greenhouse effect” caused by carbon dioxide and methane in the upper atmosphere. But what are the alternatives to the fossil fuel-based technology?

Global Warming Scientists

Recently, James Hansen, considered the “father of global warming science” was joined by three other scientists (Drs. Ken Caldeira, Kerry Emanuel and Tom Wigley) in writing an open letter to environmental groups calling on them to support the development of nuclear power. Their reason was to reduce the burning of fossil fuel, which creates global climate disruption/global warming.

“Renewables like wind and solar and biomass will certainly play roles in a future energy economy, but those energy sources cannot scale up fast enough to deliver cheap and reliable power at the scale the global economy requires.... Regardless of these advantages, nuclear needs to be encouraged based on its societal benefits.” They have joined environmental journalist George Monbiot (author of “Heat”) in taking this position.

But are they right?

Nuclear Emissions

Probably the foremost issue concerning nuclear power is that of safety – one where critics and defendants of nuclear power disagree wildly. In part, that difference is due to different views of how radiation affects people and other living organisms. Until recently, it was claimed that there was a threshold below which radiation would have no effect. Others, however, say that it is a “dose-response” effect – the more powerful the radiation, the greater the effect – and that all radiation has an effect, with the “response” (meaning the effect) having a linear relationship to the dose. X amount of radiation will create Y number of cases of cancer; 10X amount will create 10Y number.

This is similar to the debate about endocrine disrupting toxins like dioxin, for instance. Most toxicologists argue that “the dose equals the poison”, that there is a direct, “lineal” relationship between

the amount of the dose and the likelihood that it will sicken a person. Noted toxicologist/environmentalist Theo Colborn has shown something different, however. She has shown that, especially for embryos and babies, very low levels can be even more dangerous. One research team, Jay M. Gould and Benjamin Goldman, have produced evidence that the effects of radiation rapidly increase as the lower levels increase, and then it levels off. This is due to the Petkau effect, an effect discovered by Dr. Abraham Petkau who discovered that prolonged low dosages of radiation can be much more harmful than shorter higher dosages, even if the former result in much lower overall exposure. The reason is that the prolonged, lower dosages have the effect of producing oxygen free radicals which damage the immune system.

In their book “Deadly Deceit,” Gould and Benjamin document the results. Consider the case of the Millstone (CT) nuclear power plant, built in 1970: According to Gould and Benjamin, a Dr. Ernest Steinglass studied cancer mortalities in relation to distance from the power plant. Steinglass found that from 1970 to 1975 cancer mortality increased by 58% in Waterford Township, where the nuclear plant is located. Five miles east of the plant, in New London, cancer mortalities increased by 44% and they increased in the state as a whole by 12% vs. 6% in the U.S. as a whole. He also found that increases in New England states downwind of the plant also varied similarly in relation to distance from the plant.¹



Radiation plume from Millstone nuclear power plant

These findings are not unique. Another study concluded: “*Most U.S. counties with the highest thyroid cancer incidence are in a contiguous area of eastern Pennsylvania, New Jersey, and southern New York State. Exposures to radioactive iodine emissions from 16 nuclear power reactors within a 90-mile radius in this area indicate that these emissions are a likely etiological factor in rising thyroid cancer incidence rates.*”²

Nuclear Accidents

While all nuclear power plants emit radioactivity during normal operation, there is always the danger of nuclear accidents at any plant, the most famous ones having been Three Mile Island, Chernobyl and now Fukushima.

In November and December of 1970 the Savannah River (South Carolina) nuclear power plant had a significant accident. Radioactivity in rain was measured at six times the normal level in the state vs. a decline in the rest of the country. Starting in November, 1970 infant mortalities in South Carolina increased significantly, peaking in January, 1971, at 24% higher than January of the previous year. In the US as a whole, infant mortalities declined. There was also a spike in infant mortalities for babies born in the summer of 1971 – who would have been in their first or second trimester at the time of the accident, vs. a decrease in infant mortalities in the South East and nationally. A similar divergence in infant mortalities as well as death rates continued for 15 years after that accident.³

The fact of the accident at Savannah River was not revealed until October of 1988, nearly 20 years later. This, in itself, gives rise to another issue: The fact that the government regulatory bodies cannot be trusted, or rather, they can only be trusted by the industry they are supposed to regulate. This became clear with another meltdown – the home loan meltdown, when it became clear that the government bodies meant to regulate home loans and banking were being regulated by the banks and lenders. The same can be said of the body that was supposed to regulate off-shore oil drilling, as was revealed at the time of BP's disastrous Macondo oil spill in the Gulf of Mexico.

1 Gould & Benjamin, “Deadly Deceit”, p. 128

2 <http://www.ncbi.nlm.nih.gov/pubmed/19927407>

3 Gould & Benjamin, pp. 42-45

Nuclear “Regulators”

If anything, matters are even worse with nuclear energy. The original body meant to regulate nuclear energy in the US was the Atomic Energy Commission (AEC). Its task was both to monitor and to promote nuclear energy. When that became too much, the Nuclear Regulatory Commission was split off. The NRC has the task of regulating the nuclear industry. “It wasn’t much of a change,” said Peter A. Bradford, a former N.R.C. commissioner who now teaches at Vermont Law School. “The N.R.C. inherited the regulatory staff and adopted the rules and regulations of the A.E.C. Intact.” The same article that quotes Bradford comments, “*Even the agency’s own internal monitors say the N.R.C. is prone to dither when companies complain that its proposed actions would cost time or money. The promise of lucrative industry work after officials leave the commission probably doesn’t help, critics say, pointing to dozens over the years who have taken jobs with nuclear power companies and lobbying firms.*”⁴

Internationally, the body that supposedly regulates nuclear energy is the UN agency, the International Atomic Energy Agency (IAEA). It has the same conflict of interest as did the old AEC; it is also charged with promoting the use of atomic energy. In this case, the problem is even greater because the world's number one health agency, the World Health Organization (WHO), under a 1959 agreement, must clear any health information it gathers related to radiation with the IAEA.⁵ Therefore, we should be skeptical of the WHO's assessment of the health damage done by the Chernobyl disaster.

Chernobyl

On April 26, 1986, the Soviet nuclear power plant in Chernobyl caught fire and exploded, sending radiation around the world. The ultimate consequences of that disaster are in dispute to this day. The IAEA claims that about 4,000 people will ultimately have died due to Chernobyl. Greenpeace and other bodies like the Belarus Academy of Science, however, calculates that there will be some 270,000 additional cancers of which 93,000 will be fatal and that from 1990 to 2005 the total death count in Russia, Ukraine and Belarus could reach 200,000.⁶



Birth defects around Chernobyl are not counted; a google image search will reveal many and much more horrific birth defects.

The death count, however, is only part of the story. As the *Guardian* article cited above comments: “*Linda Walker, of the UK Chernobyl Children's Project, which funds Belarus and Ukraine orphanages and holidays for affected children, called for a determined effort to learn about the effects of the disaster. 'Parents are giving birth to babies with disabilities or genetic disorders ... but, as far as we know, no research is being conducted.'*”

One book, “Chernobyl: Consequences of the Catastrophe for People and the Environment”, written by a team of Russian scientists, claims a far, far higher death toll than any other – 985,000 deaths. Published by the National Academy of Science, the book is not available anymore. However, one review writes: “*For the period 1990-2000 cancer mortality in Belarus increased 40%, it states, again based on medical data and illuminated by tables in the book. 'The increase was a maximum in the most highly contaminated Gomel Province and lower in the less contaminated Brest and Mogilev provinces.' They include childhood cancers, thyroid cancer, leukemia and other cancers.*”⁷ The same review points out that there is evidence of fallout from Chernobyl as far away as in sediment in the Nile River. If this is so, then there would inevitably be deaths around the world, although the death counts (including in this book) are only from the region immediately surrounding Chernobyl.

This study has been widely criticized by scientists. They attack it on the basis that other factors – poverty, etc. - have not been accounted for in considering the heightened death rates. However, other scientists apparently don't consider the more far reaching results of Chernobyl. Immediately around Chernobyl, plant

4 <http://nuclear-news.net/2011/05/08/nuclear-regulatory-commission-under-the-thumb-of-nuclear-industry/>

5 <http://www.opednews.com/articles/2/New-Book-Concludes-Cherno-by-Karl-Grossman-100902-941.html>

6 <http://www.greenpeace.org/international/en/news/features/chernobyl-deaths-180406/> and <http://www.theguardian.com/environment/2010/jan/10/chernobyl-nuclear-deaths-cancers-dispute>

7 <http://www.opednews.com/articles/New-Book-Concludes-Cherno-by-Karl-Grossman-100902-941.html>

mutations have been found, and birds have been found to have a decreased brain size. The same review cites a study that found that *"survival rates of barn swallows in the most contaminated sites near the Chernobyl nuclear power plant are close to zero. In areas of moderate contamination, annual survival is less than 25%." Research is cited into ghastly abnormalities in barn swallows that do hatch: "two heads, two tails."*

Of her reflections on 14 months editing the book, she said: "Every single system that was studied--whether human or wolves or livestock or fish or trees or mushrooms or bacteria--all were changed, some of them irreversibly. The scope of the damage is stunning."

As far away as the West Coast of North America, it was found that the hatchlings of certain bird species experienced a 60% death rate after Chernobyl. Every conceivable reason for this death rate – lack of food, pesticides, etc. - was ruled out. The deaths followed a Chernobyl-laden rain on the region, and the only areas where such deaths was found not to have occurred were those areas where the rain did not fall. There can be little doubt that it was Chernobyl that caused these deaths so many thousands of miles away.

If Chernobyl caused this bird deaths at this great distance, what other long-term consequences might exist?

Fukushima

Then there is Fukushima.

It is impossible at this early stage to fully measure the health effects, but it is a disaster in the making. Already in Fukushima prefecture, thyroid cancer in young people is running at 12 per 100,000 compared to the national rate in Japan of 1.7 per 100,000.⁸

Tens and possibly hundreds of thousands of gallons of radioactive contaminated water are flowing into the Pacific Ocean per day. In part this was due to leaks in the storage tanks that were belatedly discovered. The greater problem, however, is the underground runoff from surrounding mountains. This underground river is being contaminated. Attempts have been made to block its flow to the ocean, but that has resulted in making the ground under the destroyed power plant so muddy that it is unstable. It is feared that any new earthquake could cause the plant to collapse entirely.

Presently, Tepco is trying to remove the fuel rods from the crippled reactor. According to one report, this is “one of the most dangerous operations ever attempted in nuclear history.”⁹ If the rods break or come in direct contact with each other a nuclear fire could result with a massive leakage of radiation. There are over 1500 rods, and the entire process is scheduled to last over a year.

Defenders of nuclear power minimize the damage from the water already leaked into the ocean, on the grounds that it's a huge ocean and will dilute the radioactive water. This sounds suspiciously like those who claimed that sending millions of tons of carbon dioxide up into the atmosphere isn't dangerous because the atmosphere is so huge. Nobody really knows, for instance, whether the radioactivity will concentrate in certain areas.

Difficult to Assess Long-Term Affects

Considering these long term affects runs into two huge problems:

First is the inherently conservative nature of scientists and the scientific method. It is not easy to prove that event “A” caused event “B” in the real world. That's because there are so many different factors, so many different events, that also happen at the same time, so how does one rule out all the other factors? Since most times this is impossible, even objective scientists are unwilling to draw the conclusions and they tend to condemn those who are willing to make the leap.

However, as Theo Colborn has pointed out, when considering environmental consequences we must use a different standard. Even though a certain synthetic chemical may not be able to be proven by scientific standards to cause birth defects, for instance, still if there is reasonable suspicion, and if a mechanism for it to have that effect is demonstrated, then the chemical should be banned anyway. A certain degree of caution, in other words, is reasonable when considering the long term environmental effects.

The same is true for radiation. It may be impossible by modern scientific standards to prove what general effects longer term exposure has, but if there is enough circumstantial evidence (and there is) and if a mechanism is understood (the Petkau Effect), then it can reasonably be considered to be guilty.

⁸<http://www.beyondnuclear.org/japan/>

⁹<http://rt.com/news/fukushima-nuclear-fuel-rods-072/>

As Linda Walker (quoted above regarding the orphans) commented on the lack of studies of birth defects, it is difficult if not impossible to find studies on the longer term mutagenic effects on plants and wildlife. The IAEA certainly won't fund such studies since it would conflict with their official task of promoting the use of nuclear power.

“New” Technologies

Nuclear advocates are always coming up with theoretical new technologies that they claim will resolve all the problems of present day nuclear power. On the one hand there is nuclear fusion (vs. present day fission) power. This has been advertised as the solution for decades, and as they say, “nuclear fusion is the energy source of the future.... and always will be so.” On the other hand, there are the generation IV, sodium cooled nuclear reactors. The many problems of these reactors have been outlined in many sources. They include the extreme vulnerability to burning if there ever is a leak of the sodium.¹⁰

Storage of Waste

Then there is the problem of storage of the nuclear wastes – all 70,000 metric tons that have accumulated so far in the United States alone.¹¹ All sorts of schemes have been proposed for storage of these wastes. None have been acceptable. Again, it is like with the issue of new technologies for the power plants, except this is even more dangerous; capitalism continues to produce these deadly wastes with no acceptable means of storing them. Even if such a means were devised, there is also the huge dangers associated with transporting these wastes, as has been shown by recent wrecks of freight trains carrying crude oil. It's a little like jumping off the Empire State Building and saying, “I'll figure out a way to land safely on the way down.”

Nuclear Power Uneconomical

When Hansen and his associates sent their open letter to the environmental groups, they in effect blamed those groups for the halt in construction of new nuclear power plants. From 1982 to 2012, not a single nuclear power plant was authorized for construction in the US. This was not due to opposition from any environmental groups; it was due to lack of interest from Wall St. The reason is simple: Despite massive government subsidies, the economics simply don't add up.

“The countries where nuclear has dead-ended are market-based economies where the nuclear industry has simply been unable to deliver a competitive product,” writes author and journalist Joseph Romm. “Indeed, despite having U.S. Taxpayers swallow most of the risk for the high-cost of new nukes through the loan guarantee program and most of the risk of a major nuke disaster through the Price Anderson act, the industry has been unable to provide a competitive product.”¹²

Advocates of nuclear power put the cost of nuclear-generated electricity as being pennies per kilowatt-hour (Kh). They are being dishonest because this is based purely on operating costs. They don't include the cost of building the plant – the capital costs. When this is included, the actual costs are around 25 to 30 cents per Kh, which is triple the current electricity rates.¹³

As Ralph Nader wrote: *“It is telling that Wall Street, which rarely considers the consequences of gambling on a risk, will not finance the construction of a nuclear plant without a full loan guarantee from the U.S. government. Nuclear power is also uninsurable in the private insurance market. The Price-Anderson Act of 1957 requires taxpayers to cover almost all the cost if a meltdown should occur.”*¹⁴

Renewables

10 http://www.beyondnuclear.org/storage/documents/BN_Final_FullFactsheet_IFR_Jan2013.pdf

11 <http://www.beyondnuclear.org/investigate-nrc/2013/11/13/charge-one-the-nuclear-waste-confidence-game.html>

12 <http://thinkprogress.org/climate/2013/11/04/2882671/nuclear-power-climate/>

13 <http://thinkprogress.org/climate/2009/01/05/202859/study-cost-risks-new-nuclear-power-plants/>

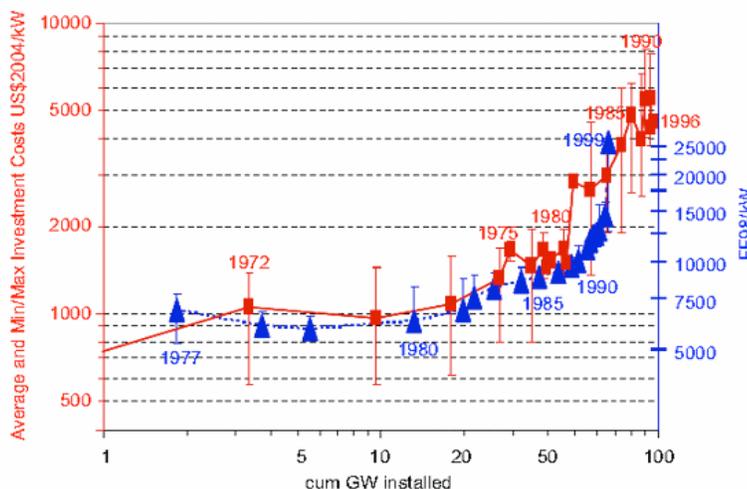
14 <http://samuellawrencefoundation.org/atomic-energy-unnecessary-uneconomic-uninsurable-unevacuable-and-unsafe/>

Corporate America and other defenders of nuclear power claim that there is no alternative to nuclear energy if we want to seriously decrease the use of fossil fuels. In the first place, however, nuclear is nowhere nearly as clean a power source as its defenders claim. Costs can serve as a rough estimate of energy efficiency, and as shown here, the costs of nuclear power are nowhere near as low as it is claimed.

Advocates of nuclear power claim that renewables are no substitute. In the first place, they neglect to

consider the fact that in the last half of the 20th century, of the US some \$150 billion on developing alternative power sources, 95% of this went to nuclear.¹⁵ Despite this, however, renewables can provide a far greater portion than the nuclear advocates are willing to admit. A study at Stanford University showed, for instance, that there is enough offshore wind off the east coast of the US to meet the electricity demands of at least one third of the nation.¹⁶

As long ago as 2009, *Scientific American* published an article explaining how all of the world's energy needs could be provided by wind, water and solar power.¹⁷ This study did not account for the massive energy savings that can be achieved by retrofitting/weather proofing housing as well as shifting from individual automobile use to mass transit in countries like the United States. (George Monbiot, in his book "Heat" documents this.)



Average and min/max reactor construction costs per year of completion date for US and France versus cumulative capacity completed.

Source: <http://thinkprogress.org/climate/2013/11/04/2882671/nuclear-power-climate/>

Time Gap

A final nail in the coffin of the argument of the pro-nuclear global warming scientists is this: They base their argument on the claim that the issue of global warming is so extreme that we must do something *now* about it. They claim that renewable technology is not sufficiently advanced. However, rapid strides are being made in the latter, and if as long as four years ago it would have been possible to provide all the world's energy needs through water, wind and solar, imagine what is the situation presently. On the other hand, it takes about ten years from the time a nuclear plant's plans are drawn up to the time that plant can start generating electricity. So even if there were plans drawn up for sufficient nuclear plants right now (there aren't), it would still take ten years for them to become operational.

Climate Disruption an Argument *Against* Nuclear Power

In fact, the issue of global climate disruption/global warming is a strong reason not to deploy any more nuclear plants and to start shutting down presently operating ones as quickly as possible. Due to climate disruption, we will be seeing increasingly severe storms. Take Typhoon Hyan, which recently devastated the Philippines. This was accompanied by a storm surge of some thirty feet. Just imagine if there had been a nuclear plant there. People would not only be dealing with the devastation of the storm, but with another Fukushima in addition. Further, if global climate disruption gets as bad as many scientists predict, then entire societies will tend to fall apart. Who will care for the nuclear plants and guard the wastes of these plants in such societies?

Issue Political

Adding even more nuclear power, then, is only adding fuel to the flames; it will make all matters even worse. If that is so, then why do serious scientists like James Hansen, and serious journalists like George Monbiot support nuclear power?

15 http://www.beyondnuclear.org/storage/documents/Renewables_and_nukes_factsheet.pdf

16 <http://news.stanford.edu/news/2012/september/offshore-wind-energy-091412.html>

17 <http://www.scientificamerican.com/article.cfm?id=a-path-to-sustainable-energy-by-2030&page=3>

The answer lies in the fact that they cannot see beyond capitalism, in which they have illusions. First of all, they believe that, given sufficient democratic input, that capitalism can regulate this dangerous technology. Secondly, since there is no alternative to capitalism, then a real transformation of how electric energy is produced and used is impossible, since such a transformation is only possible through central planning.

Their extreme concern over global climate disruption/global warming is more than justified. The problem is that they cannot see the political context – capitalism itself.